

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

2016 USGS Lidar DEM: Tishomingo, MS

**1.2. Summary description of the data:**

These are Digital Elevation Model (DEM) data for the north and south sections for the 2016 Mississippi Lidar QL2 Lidar project. Class 2 (ground) lidar points in conjunction with the hydro breaklines were used to create a hydro-flattened raster DEM.

North AOI (Northeast MS):

2949 individual 1500 m x 1500 m tiles, 1 m grid spacing

Northern AOI counties: Alcorn, Benton, Itawamba, Lee, Lowendes, Marshall, Monroe, Prentiss, Tippah, Tishomingo, and Union, covering approximately 2318 square miles of the 3825 total square mile project area.

The data for counties in the northern AOI were developed based on a horizontal projection/datum of NAD83 (2011) UTM Zone 16, meters and vertical datum of NAVD1988 (Geoid 12B), meters.

In order to post process the lidar data to meet task order specifications and meet ASPRS vertical accuracy guidelines, Quantum Spatial, Inc. established a total of 59 ground control points that were used to calibrate the lidar to known ground locations established throughout the Mississippi project area. One point was removed due to drastic change in the area. An additional 96 independent accuracy checkpoints, 56 in Bare Earth and Urban landcovers (56 NVA points), 40 in Forested, Shrubs, and Tall Weeds categories (40 VVA points), were used to assess the vertical accuracy of the data. These checkpoints were not used to calibrate or post process the data.

Vertical Accuracy = 4.9 cm RMSE

South AOI (Camp Shelby):

1791 individual 5,000-foot x 5,000-foot tiles, 2.5 ft grid spacing

Southern AOI counties: Forrest, Greene, Lamar, and Perry, covering approximately 1507 square miles of the 3825 total square mile project area.

The data for counties in the southern AOI were developed based on a horizontal projection/datum of NAD83 (2011) State Plane Mississippi East Zone, US survey feet and vertical datum of NAVD1988 (Geoid 12B), US survey feet. NOAA OCM converted the elevations from feet to meters.

In order to post process the lidar data to meet task order specifications and meet ASPRS vertical accuracy guidelines, Quantum Spatial, Inc. established a total of 38 ground control points that were used to calibrate the lidar to known ground locations established throughout the Mississippi project area. An additional 78 independent accuracy checkpoints, 43 in Bare Earth and Urban landcovers (43 NVA points), 35 in Forested, Shrubs, and Tall Weeds categories (35 VVA points), were used to assess the vertical accuracy of the data. These checkpoints were not used to calibrate or post process the data. One point was removed from the NVA calculations due to drastic change in the area.

Vertical Accuracy = 4.6 cm RMSE

**Dataset Description:** The Mississippi 2016 Aerial LiDAR Mapping project called for the planning, acquisition, processing and derivative products of LIDAR data to be collected at an aggregate nominal pulse spacing (NPS) of 0.7 meters. Project specifications are based on the U.S. Geological Survey National Geospatial Program Base LIDAR Specification, Version 1.2. LiDAR data was delivered in RAW flight line swath format. Corresponding 2.5-foot intensity images in GeoTIFF format and 2.5-foot bare-earth DEM files in ERDAS .IMG format were created with the same tile schema. Tiles names follow the US National Grid naming schema. Hydro-flattened breaklines were produced in Esri file geodatabase format. Continuous contours with a 1-foot interval were produced in Esri file geodatabase format.

**Ground Conditions:** Lidar was collected in winter of 2016, while no snow was on the ground and rivers were at or below normal levels

The NOAA Office for Coastal Management (OCM) received the data for processing of the data to the Data Access Viewer (DAV) and https. In addition to these bare earth Digital Elevation Model (DEM) data, the lidar point data that these DEMs were created from, are also available. These data are available for custom download at the link provided in the URL section of this metadata re...

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2016-01-17 to 2016-02-11

**1.5. Actual or planned geographic coverage of the data:**

W: -89.664253, E: -88.094817, N: 35.004699, S: 30.901302

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*  
Model (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

NOAA Office for Coastal Management (NOAA/OCM)

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

NOAA Office for Coastal Management (NOAA/OCM)

**2.4. E-mail address:**

coastal.info@noaa.gov

**2.5. Phone number:**

(843) 740-1202

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

## 5. Data Lineage and Quality

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

### 5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

*(describe or provide URL of description):*

#### Process Steps:

- 2016-01-01 00:00:00 - LAS Point Classification: The point classification is performed as described below. The bare earth surface is then manually reviewed to ensure correct classification on the Class 2 (Ground) points. After the bare-earth surface is finalized, it is then used to generate all hydro-breaklines through heads-up digitization. All ground (ASPRS Class 2) lidar data inside of the Lake Pond and Double Line Drain hydro-flattened breaklines were then classified to Water (ASPRS Class 9) using TerraScan macro functionality. A buffer of 3 feet was also used around each hydro-flattened feature to classify these ground (ASPRS Class 2) points to Ignored ground (ASPRS Class 10). All Lake Pond Island and Double Line Drain Island features were checked to ensure that the ground (ASPRS Class 2) points were reclassified to the correct classification after the automated classification was completed. All overlap data was processed through automated functionality provided by TerraScan to classify the overlapping flight line data to approved classes by USGS. The overlap data was classified using standard LAS overlap bit. These classes were created through automated processes only and were not verified for classification accuracy. Due to software limitations within TerraScan, these classes were used to trip the withheld bit within various software packages. These processes were reviewed and accepted by USGS through numerous conference calls and pilot study areas. All data was manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler. Global Mapper was used as a final check of the bare earth dataset. GeoCue was then used to create the deliverable industry-standard LAS files for both the All Point Cloud Data and the Bare Earth. Quantum Spatial, Inc. proprietary software was used to perform final statistical analysis of the classes in the LAS files, on a per tile level to verify final classification metrics and full LAS header information.
- 2016-01-01 00:00:00 - Hydro Flattened Raster DEM Process: Class 2 (Ground) lidar points in conjunction with the hydro breaklines were used to create a 1 meter hydro-flattened raster DEM. Using automated scripting routines within ArcMap, an ERDAS Imagine .IMG file was created for each tile. Each surface is reviewed using Global Mapper to check for any surface anomalies or incorrect elevations found within the surface.
- 2018-07-09 00:00:00 - The NOAA Office for Coastal Management (OCM) received the DEM files from MS State University. There were 2 AOIs in the project, a northern AOI and a southern AOI. The data in the northern AOI were in UTM Zone 16 North

coordinates and NAVD88 (Geoid12B) elevations in meters at a 1m grid spacing. The data in the southern AOI were in MS State Plane East, US Survey Feet coordinates and NAVD88 (Geoid12B) elevations in feet at a 2.5 ft grid spacing. OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. The files in the southern AOI were converted from elevations in feet to meters 2. The files were copied to https.

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

## **6. Data Documentation**

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:**

**6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/52979>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

**7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**

NOAA Office for Coastal Management (NOAA/OCM)

**7.2.1. If data hosting service is needed, please indicate:****7.2.2. URL of data access service, if known:**

<https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=8567>

[https://coast.noaa.gov/htdata/raster2/elevation/MS\\_Tishomingo\\_DEM\\_2016\\_8567](https://coast.noaa.gov/htdata/raster2/elevation/MS_Tishomingo_DEM_2016_8567)

**7.3. Data access methods or services offered:**

Data is available online for bulk and custom downloads.

**7.4. Approximate delay between data collection and dissemination:**

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

**8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

**8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

**8.1.1. If World Data Center or Other, specify:****8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:****8.2. Data storage facility prior to being sent to an archive facility (if any):**

Office for Coastal Management - Charleston, SC

**8.3. Approximate delay between data collection and submission to an archive facility:****8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*